

We Claim:

1 1. A tungsten electrode for a quartz lamp which exhibits superior
2 stability against cracking when the shank of said electrode is sealed in the neck of a
3 quartz glass envelope, with said electrode having a predetermined length of said
4 shank outer surface containing a loosely adhering outer tungsten layer which is
5 detachable from the surface of said electrode upon being sealed in the neck section
6 of the envelope of a quartz lamp.

1 2. A tungsten electrode for a lamp which exhibits superior stability to
2 cracking when sealed in the neck of a quartz glass envelope, said electrode
3 comprising an elongated member having a tip portion at a first end, and a shank
4 portion at a second end, wherein a predetermined length of the shank outer surface
5 of said electrode contains a loosely adhering outer surface layer of elemental
6 tungsten which is detachable from the surface of said electrode upon being sealed in
7 the neck section of the envelope of a quartz lamp.

1 3. A method for making a tungsten electrode suitable for use in a lamp
2 which contains a quartz envelope which comprises:
3 (a) providing a tungsten electrode of a predetermined
4 configuration having a tip portion and a shank portion;
5 (b) forming a substantially uniform oxide coating on a selected
6 portion said shank;
7 (c) reducing said oxide coating to a loosely adhering coating of
8 substantially elemental tungsten, whereby said electrode exhibits superior sealing
9 properties when said tungsten coated portion of the shank is sealed in the neck of a
10 lamp having a quartz glass envelope.

1 4. The method of claim 3 in which the reduction of said oxide coating to
2 tungsten is carried out at an elevated temperature in a hydrogen atmosphere.

1 5. The electrode made by the process of claim 3.

1 6. A method for making a tungsten electrode suitable for use in a quartz
2 lamp which comprises:
3 (a) providing a tungsten electrode of a predetermined
4 configuration having a tip portion and a shank portion;
5 (b) forming a substantially uniform oxide coating on a selected
6 portion of said shank;
7 (c) reducing said oxide coating to substantially elemental
8 tungsten, whereby said electrode exhibits reduced cracking and superior sealing
9 properties when the tungsten coated portion of the shank is sealed in the neck of a
10 lamp having a quartz glass envelope.

1 7. The method of claim 6 in which said uniform oxide coating is formed
2 by heating said selected portion of the shank to incandescence in an oxidizing
3 atmosphere.

1 8. The electrode made by the process of claim 6.

1 9. A lamp which includes a quartz envelope, said envelope containing a
2 pair of oppositely opposed neck down sections which each contain a tungsten
3 electrode sealed therein, with said electrodes being in the form of an elongated
4 member having a shank portion and a tip portion and where a predetermined length
5 of said shank portion, which is sealed in said neck section, contains a loosely
6 adhering outer surface layer of elemental tungsten, whereby in use said lamp exhibits
7 superior stability against cracking.

1 10. The lamp of claim 9 in which said surface layer of tungsten is
2 detachable from the electrode surface when sealed in said neck section.